

SEQUENCE LISTING

<110> Nemod Biotherapeutics GmbH & Co. KG

<120> Tumor-Specific Recognition Molecules

<130> P159602USA

<140> US 10/ 536,834

<141> 2003-12-01

<150> DE 102 56 900.2

<151> 2002-11-29

<150> PCT/DE03/003994

<151> 2003-12-01

<160> 113

<170> PatentIn Ver. 2.1

<210> 1

<211> 5

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: designed peptide

<400> 1

Asn Tyr Trp Leu Gly
1 5

<210> 2

<211> 17

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: designed peptide

<400> 2

Asp Ile Tyr Pro Gly Gly Gly Tyr Thr Asn Tyr Asn Glu Lys Phe Lys
1 5 10 15

Gly

<210> 3

<211> 17

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: designed peptide

<400> 3

Asp Ile Tyr Pro Gly Gly Ser Tyr Thr Asn Tyr Asn Glu Lys Phe Lys

1 5 10 15
Gly

<210> 4
<211> 10
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: designed
peptide

<400> 4
Tyr Asp Ala Ala Gly Pro Trp Phe Ala Tyr
1 5 10

<210> 5
<211> 10
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: designed
peptide

<400> 5
Tyr Asp Ala Ala Gly Pro Gly Phe Ala Tyr
1 5 10

<210> 6
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: designed
peptide

<400> 6
Tyr Asp Asn His Tyr Phe Asp Tyr
1 5

<210> 7
<211> 16
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: designed
peptide

<400> 7
Arg Ser Ser Gln Ser Ile Val His Ser Asn Gly Asn Thr Tyr Leu Glu
1 5 10 15

<210> 8

<211> 16
<212> PRT
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: designed
peptide

<400> 8

Arg Ser Ser Gln Ser Leu Leu His Ser Asn Gly Asn Thr Tyr Leu His
1 5 10 15

<210> 9

<211> 16

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: designed
peptide

<400> 9

Lys Ser Ser Gln Ser Leu Leu His Ser Asp Gly Lys Thr Tyr Leu Tyr
1 5 10 15

<210> 10

<211> 7

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: designed
peptide

<400> 10

Lys Val Ser Asn Arg Phe Ser
1 5

<210> 11

<211> 7

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: designed
peptide

<400> 11

Glu Val Ser Ser Arg Phe Ser
1 5

<210> 12

<211> 9

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: designed
peptide

<400> 12
Phe Gln Gly Ser His Val Pro Tyr Thr
1 5

<210> 13
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: designed
peptide

<400> 13
Ser Gln Ser Thr His Val Pro Tyr Thr
1 5

<210> 14
<211> 5
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: designed
peptide

<400> 14
Asn Tyr Trp Ile Gly
1 5

<210> 15
<211> 5
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: designed
peptide

<400> 15
Asn Tyr Trp Met Gly
1 5

<210> 16
<211> 5
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: designed
peptide

<400> 16
Asn Tyr Trp Trp Gly
1 5

<210> 17

<211> 5
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: designed
peptide

<400> 17
Asn Tyr Trp Val Gly
1 5

<210> 18
<211> 17
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: designed
peptide

<400> 18
Asp Ile Tyr Pro Gly Gly Asp Tyr Thr Asn Tyr Asn Glu Lys Phe Lys
1 5 10 15

Gly

<210> 19
<211> 17
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: designed
peptide

<400> 19
Asp Ile Tyr Pro Gly Gly Asn Tyr Thr Asn Tyr Asn Glu Lys Phe Lys
1 5 10 15

Gly

<210> 20
<211> 17
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: designed
peptide

<400> 20
Asp Ile Tyr Thr Gly Gly Gly Tyr Thr Asn Tyr Asn Glu Lys Phe Lys
1 5 10 15

Gly

<210> 21
<211> 17
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: designed
peptide

<400> 21
Asp Ile Tyr Thr Gly Gly Asp Tyr Thr Asn Tyr Asn Glu Lys Phe Lys
1 5 10 15

Gly

<210> 22
<211> 17
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: designed
peptide

<400> 22
Asp Ile Tyr Thr Gly Gly Asn Tyr Thr Asn Tyr Asn Glu Lys Phe Lys
1 5 10 15

Gly

<210> 23
<211> 17
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: designed
peptide

<400> 23
Asp Ile Tyr Thr Gly Gly Ser Tyr Thr Asn Tyr Asn Glu Lys Phe Lys
1 5 10 15

Gly

<210> 24
<211> 17
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: designed
peptide

<400> 24
Asp Ile Tyr Ala Gly Gly Gly Tyr Thr Asn Tyr Asn Glu Lys Phe Lys

1 5 10 15
Gly

<210> 25
<211> 17
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: designed
peptide

<400> 25
Asp Ile Tyr Ala Gly Gly Asp Tyr Thr Asn Tyr Asn Glu Lys Phe Lys
1 5 10 15

Gly

<210> 26
<211> 17
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: designed
peptide

<400> 26
Asp Ile Tyr Ala Gly Gly Asp Tyr Thr Asn Tyr Asn Glu Lys Phe Lys
1 5 10 15

Gly

<210> 27
<211> 17
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: designed
peptide

<400> 27
Asp Ile Tyr Ala Gly Gly Ser Tyr Thr Asn Tyr Asn Glu Lys Phe Lys
1 5 10 15

Gly

<210> 28
<211> 16
<212> PRT
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: designed peptide

<400> 28

Arg	Pro	Ser	Gln	Ser	Ile	Val	His	Ser	Asn	Gly	Asn	Thr	Tyr	Leu	Glu
1				5					10					15	

<210> 29

<211> 16

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: designed peptide

<400> 29

Arg	Pro	Ser	Gln	Ser	Ile	Val	His	Ser	Asn	Gly	Asn	Thr	Tyr	Leu	Glu
1				5					10					15	

<210> 30

<211> 16

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: designed peptide

<400> 30

Arg	Ser	Ser	Gln	Ser	Ile	Val	His	Ser	Asn	Gly	Asn	Thr	Tyr	Phe	Glu
1				5					10					15	

<210> 31

<211> 16

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: designed peptide

<400> 31

Arg	Pro	Ser	Gln	Ser	Leu	Val	His	Ser	Asn	Gly	Asn	Thr	Tyr	Leu	Glu
1				5					10					15	

<210> 32

<211> 16

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: designed peptide

<400> 32

Arg	Pro	Ser	Gln	Ser	Ile	Val	His	Ser	Asn	Gly	Asn	Thr	Tyr	Phe	Glu
1				5					10					15	

<210> 33
<211> 16
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: designed
peptide

<400> 33
Arg Ser Ser Gln Ser Leu Val His Ser Asn Gly Asn Thr Tyr Phe Glu
1 5 10 15

<210> 34
<211> 16
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: designed
peptide

<400> 34
Arg Pro Ser Gln Ser Leu Leu His Ser Asn Gly Asn Thr Tyr Leu His
1 5 10 15

<210> 35
<211> 16
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: designed
peptide

<400> 35
Arg Ser Ser Gln Ser Ile Leu His Ser Asn Gly Asn Thr Tyr Leu His
1 5 10 15

<210> 36
<211> 16
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: designed
peptide

<400> 36
Arg Ser Ser Gln Ser Leu Leu His Ser Asn Gly Asn Thr Tyr Phe His
1 5 10 15

<210> 37
<211> 16
<212> PRT
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: designed peptide

<400> 37

Arg Pro Ser Gln Ser Ile Leu His Ser Asn Gly Asn Thr Tyr Leu His
1 5 10 15

<210> 38

<211> 16

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: designed peptide

<400> 38

Arg Pro Ser Gln Ser Leu Leu His Ser Asn Gly Asn Thr Tyr Phe His
1 5 10 15

<210> 39

<211> 16

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: designed peptide

<400> 39

Arg Ser Ser Gln Ser Ile Leu His Ser Asn Gly Asn Thr Tyr Phe His
1 5 10 15

<210> 40

<211> 16

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: designed peptide

<400> 40

Lys Pro Ser Gln Ser Leu Leu His Ser Asp Gly Lys Thr Tyr Leu Tyr
1 5 10 15

<210> 41

<211> 16

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: designed peptide

<400> 41

Lys Ser Ser Gln Ser Ile Leu His Ser Asp Gly Lys Thr Tyr Leu Tyr
1 5 10 15

<210> 42
<211> 16
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: designed
peptide

<400> 42
Lys Ser Ser Gln Ser Leu Leu His Ser Asp Gly Lys Thr Tyr Phe Tyr
1 5 10 15

<210> 43
<211> 16
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: designed
peptide

<400> 43
Lys Pro Ser Gln Ser Ile Leu His Ser Asp Gly Lys Thr Tyr Leu Tyr
1 5 10 15

<210> 44
<211> 16
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: designed
peptide

<400> 44
Lys Pro Ser Gln Ser Ile Leu His Ser Asp Gly Lys Thr Tyr Leu Tyr
1 5 10 15

<210> 45
<211> 16
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: designed
peptide

<400> 45
Lys Ser Ser Gln Ser Ile Leu His Ser Asp Gly Lys Thr Tyr Phe Tyr
1 5 10 15

<210> 46
<211> 119
<212> PRT
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: designed peptide

```

<400> 46
Gln Val Gln Leu Lys Glu Ser Gly Ala Glu Leu Val Arg Pro Gly Thr
  1          5          10          15
Ser Val Lys Ile Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asn Tyr
          20          25          30
Trp Leu Gly Trp Val Lys Gln Arg Pro Gly His Gly Leu Glu Trp Ile
          35          40          45
Gly Asp Ile Tyr Pro Gly Gly Gly Tyr Thr Asn Tyr Asn Glu Lys Phe
          50          55          60
Lys Gly Lys Ala Thr Leu Thr Ala Asp Thr Ser Ser Ser Thr Ala Tyr
  65          70          75          80
Met Gln Leu Ser Ser Leu Thr Ser Glu Asp Ser Ala Val Tyr Phe Cys
          85          90          95
Ala Tyr Tyr Asp Ala Ala Gly Pro Gly Phe Ala Tyr Trp Gly Gln Gly
          100          105          110
Thr Thr Val Thr Val Ser Ser
          115

```

<211> 117

<213> Artificial Sequence

<223> Description of Artificial Sequence: designed peptide

[illegible]

<210> 48
<211> 119
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: designed
peptide

<400> 48
Gln Val Gln Leu Lys Gln Ser Gly Ala Glu Leu Val Arg Pro Gly Thr
1 5 10 15
Ser Val Lys Ile Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asn Tyr
20 25 30
Trp Leu Gly Trp Val Lys Gln Arg Pro Gly His Gly Leu Glu Trp Ile
35 40 45
Gly Asp Ile Tyr Pro Gly Gly Gly Tyr Thr Asn Tyr Asn Glu Lys Phe
50 55 60
Lys Gly Lys Ala Thr Leu Thr Ala Asp Thr Ser Ser Ser Thr Ala Tyr
65 70 75 80
Met Gln Leu Ser Ser Leu Thr Ser Glu Asp Ser Ala Val Tyr Phe Cys
85 90 95
Ala Tyr Tyr Asp Ala Ala Gly Pro Trp Phe Ala Tyr Trp Gly Gln Gly
100 105 110
Thr Thr Leu Thr Val Ser Ser
115

<210> 49
<211> 119
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: designed
peptide

<400> 49
Glu Val Lys Leu Val Glu Ser Gly Ala Glu Leu Val Arg Pro Gly Thr
1 5 10 15
Ser Val Lys Ile Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asn Tyr
20 25 30
Trp Leu Gly Trp Val Lys Gln Arg Pro Gly His Gly Leu Glu Trp Ile
35 40 45
Gly Asp Ile Tyr Pro Gly Gly Gly Tyr Thr Asn Tyr Asn Glu Lys Phe
50 55 60
Lys Gly Lys Ala Thr Leu Thr Ala Asp Thr Ser Ser Ser Thr Ala Tyr
65 70 75 80
Met Gln Leu Ser Ser Leu Thr Ser Glu Asp Ser Ala Val Tyr Phe Cys
85 90 95

Ala Tyr Tyr Asp Ala Ala Gly Pro Trp Phe Ala Tyr Trp Gly Gln Gly
100 105 110

Thr Ser Val Thr Val Ser Ser
115

<210> 50

<211> 119

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: designed
peptide

<400> 50

Gln Val Gln Leu Lys Glu Ser Gly Ala Glu Leu Val Arg Pro Gly Thr
1 5 10 15

Ser Val Lys Ile Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asn Tyr
20 25 30

Trp Leu Gly Trp Val Lys Gln Arg Pro Gly His Gly Leu Glu Trp Ile
35 40 45

Gly Asp Ile Tyr Pro Gly Gly Gly Tyr Thr Asn Tyr Asn Glu Lys Phe
50 55 60

Lys Gly Lys Ala Thr Leu Thr Ala Asp Thr Ser Ser Ser Thr Ala Tyr
65 70 75 80

Met Gln Leu Ser Ser Leu Thr Ser Glu Asp Ser Ala Val Tyr Phe Cys
85 90 95

Ala Tyr Tyr Asp Ala Ala Gly Pro Trp Phe Ala Tyr Trp Gly Gln Gly
100 105 110

Thr Thr Val Thr Val Ser Ser
115

<210> 51

<211> 119

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: designed
peptide

<400> 51

Glu Val Lys Leu Val Glu Ser Gly Ala Glu Leu Val Arg Pro Gly Thr
1 5 10 15

Ser Val Lys Ile Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asn Tyr
20 25 30

Trp Leu Gly Trp Val Lys Gln Arg Pro Gly His Gly Leu Glu Trp Ile
35 40 45

Gly Asp Ile Tyr Pro Gly Gly Gly Tyr Thr Asn Tyr Asn Glu Lys Phe

50 55 60
 Lys Gly Lys Ala Thr Leu Thr Ala Asp Thr Ser Ser Ser Thr Ala Tyr
 65 70 75 80
 Met Gln Leu Ser Ser Leu Thr Ser Glu Asp Ser Ala Val Tyr Phe Cys
 85 90 95
 Ala Tyr Tyr Asp Ala Ala Gly Pro Trp Phe Ala Tyr Trp Gly Gln Gly
 100 105 110
 Thr Thr Val Thr Val Ser Ser
 115

<210> 52
 <211> 119
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: designed
 peptide

<400> 52
 Gln Val Gln Leu Lys Gln Ser Gly Ala Glu Leu Val Arg Pro Gly Thr
 1 5 10 15
 Ser Val Lys Ile Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asn Tyr
 20 25 30
 Trp Leu Gly Trp Val Lys Gln Arg Pro Gly His Gly Leu Glu Trp Ile
 35 40 45
 Gly Asp Ile Tyr Pro Gly Gly Gly Tyr Thr Asn Tyr Asn Glu Lys Phe
 50 55 60
 Lys Gly Lys Ala Thr Leu Thr Ala Asp Thr Ser Ser Ser Thr Ala Tyr
 65 70 75 80
 Met Gln Leu Ser Ser Leu Thr Ser Glu Asp Ser Ala Val Tyr Phe Cys
 85 90 95
 Ala Tyr Tyr Asp Ala Ala Gly Pro Trp Phe Ala Tyr Trp Gly Gln Gly
 100 105 110
 Thr Leu Val Thr Val Ser Ala
 115

<210> 53
 <211> 119
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: designed
 peptide

<400> 53
 Gln Val Gln Leu Lys Gln Ser Gly Ala Glu Leu Val Arg Pro Gly Thr
 1 5 10 15

Ser Val Lys Ile Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asn Tyr
 20 25 30
 Trp Leu Gly Trp Val Lys Gln Arg Pro Gly His Gly Leu Glu Trp Ile
 35 40 45
 Gly Asp Ile Tyr Pro Gly Gly Gly Tyr Thr Asn Tyr Asn Glu Lys Phe
 50 55 60
 Lys Gly Lys Ala Thr Leu Thr Ala Asp Thr Ser Ser Ser Thr Ala Tyr
 65 70 75 80
 Met Gln Leu Ser Ser Leu Thr Ser Glu Asp Ser Ala Val Tyr Phe Cys
 85 90 95
 Ala Tyr Tyr Asp Ala Ala Gly Pro Trp Phe Ala Tyr Trp Gly Gln Gly
 100 105 110
 Thr Thr Val Thr Val Ser Ser
 115

<210> 54

<211> 119

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: designed peptide

<400> 54

Gln Val Thr Leu Lys Glu Ser Gly Ala Glu Leu Val Arg Pro Gly Thr
 1 5 10 15
 Ser Val Lys Ile Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asn Tyr
 20 25 30
 Trp Leu Gly Trp Val Lys Gln Arg Pro Gly His Gly Leu Glu Trp Ile
 35 40 45
 Gly Asp Ile Tyr Pro Gly Gly Gly Tyr Thr Asn Tyr Asn Glu Lys Phe
 50 55 60
 Lys Gly Lys Ala Thr Leu Thr Ala Asp Thr Ser Ser Ser Thr Ala Tyr
 65 70 75 80
 Met Gln Leu Ser Ser Leu Thr Ser Glu Asp Ser Ala Val Tyr Phe Cys
 85 90 95
 Ala Tyr Tyr Asp Ala Ala Gly Pro Trp Phe Ala Tyr Trp Gly Gln Gly
 100 105 110
 Thr Ser Val Thr Val Ser Ser
 115

<210> 55

<211> 119

<212> PRT

<213> Artificial Sequence

<220>

<210> 57
<211> 119
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: designed
peptide

<400> 57
Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala
1 5 10 15
Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asn Tyr
20 25 30
Trp Leu Gly Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Ile
35 40 45
Gly Asp Ile Tyr Pro Gly Gly Gly Tyr Thr Asn Tyr Asn Glu Lys Phe
50 55 60
Lys Gly Lys Ala Thr Leu Thr Ala Asp Thr Ser Ser Ser Thr Ala Tyr
65 70 75 80
Met Gln Leu Ser Ser Leu Thr Ser Glu Asp Ser Ala Val Tyr Tyr Cys
85 90 95
Ala Tyr Tyr Asp Ala Ala Gly Pro Trp Phe Ala Tyr Trp Gly Gln Gly
100 105 110
Thr Leu Val Thr Val Ser Ser
115

<210> 58
<211> 119
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: designed
peptide

<400> 58
Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala
1 5 10 15
Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asn Tyr
20 25 30
Trp Leu Gly Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Ile
35 40 45
Gly Asp Ile Tyr Pro Gly Gly Gly Tyr Thr Asn Tyr Asn Glu Lys Phe
50 55 60
Lys Gly Lys Ala Thr Leu Thr Ala Asp Thr Ser Ser Ser Thr Ala Tyr
65 70 75 80
Met Gln Leu Ser Arg Leu Thr Ser Glu Asp Ser Ala Val Tyr Phe Cys
85 90 95

Ala Tyr Tyr Asp Ala Ala Gly Pro Trp Phe Ala Tyr Trp Gly Gln Gly
100 105 110

Thr Leu Val Thr Val Ser Ser
115

<210> 59

<211> 119

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: designed
peptide

<400> 59

Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala
1 5 10 15

Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asn Tyr
20 25 30

Trp Leu Gly Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Ile
35 40 45

Gly Asp Ile Tyr Pro Gly Gly Gly Tyr Thr Asn Tyr Asn Glu Lys Phe
50 55 60

Lys Gly Lys Ala Thr Leu Thr Ala Asp Thr Ser Ser Ser Thr Ala Tyr
65 70 75 80

Met Glu Leu Ser Ser Leu Thr Ser Glu Asp Ser Ala Val Tyr Phe Cys
85 90 95

Ala Tyr Tyr Asp Ala Ala Gly Pro Trp Phe Ala Tyr Trp Gly Gln Gly
100 105 110

Thr Leu Val Thr Val Ser Ser
115

<210> 60

<211> 119

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: designed
peptide

<400> 60

Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala
1 5 10 15

Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asn Tyr
20 25 30

Trp Leu Gly Trp Val Lys Gln Arg Pro Gly Gln Gly Leu Glu Arg Ile
35 40 45

Gly Asp Ile Tyr Pro Gly Gly Gly Tyr Thr Asn Tyr Asn Glu Lys Phe

Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asn Tyr
 20 25 30
 Trp Leu Gly Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Ile
 35 40 45
 Gly Asp Ile Tyr Pro Gly Gly Gly Tyr Thr Asn Tyr Asn Glu Lys Phe
 50 55 60
 Lys Gly Lys Ala Thr Leu Thr Ala Asp Thr Ser Thr Ser Thr Ala Tyr
 65 70 75 80
 Met Glu Leu Ser Ser Leu Thr Ser Glu Asp Ser Ala Val Tyr Phe Cys
 85 90 95
 Ala Tyr Tyr Asp Ala Ala Gly Pro Trp Phe Ala Tyr Trp Gly Gln Gly
 100 105 110
 Thr Thr Val Thr Val Ser Ser
 115

<210> 63

<211> 119

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: designed peptide

<400> 63

Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala
 1 5 10 15
 Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asn Tyr
 20 25 30
 Trp Leu Gly Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Ile
 35 40 45
 Gly Asp Ile Tyr Pro Gly Gly Gly Tyr Thr Asn Tyr Asn Glu Lys Phe
 50 55 60
 Lys Gly Lys Ala Thr Leu Thr Ala Asp Thr Ser Thr Ser Thr Ala Tyr
 65 70 75 80
 Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Ser Ala Val Tyr Phe Cys
 85 90 95
 Ala Tyr Tyr Asp Ala Ala Gly Pro Trp Phe Ala Tyr Trp Gly Gln Gly
 100 105 110
 Thr Leu Val Thr Val Ser Ser
 115

<210> 64

<211> 119

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: designed peptide

<400> 64

Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala
1 5 10 15
Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asn Tyr
20 25 30
Trp Leu Gly Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Ile
35 40 45
Gly Asp Ile Tyr Pro Gly Gly Gly Tyr Thr Asn Tyr Asn Glu Lys Phe
50 55 60
Lys Gly Lys Ala Thr Leu Thr Ala Asp Thr Ser Thr Ser Thr Ala Tyr
65 70 75 80
Met Glu Leu Ser Ser Leu Thr Ser Glu Asp Ser Ala Val Tyr Tyr Cys
85 90 95
Ala Tyr Tyr Asp Ala Ala Gly Pro Trp Phe Ala Tyr Trp Gly Gln Gly
100 105 110
Thr Leu Val Thr Val Ser Ser
115

<210> 65

<211> 119

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: designed peptide

<400> 65

Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala
1 5 10 15
Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asn Tyr
20 25 30
Trp Leu Gly Trp Val Lys Gln Arg Pro Gly Gln Gly Leu Glu Trp Ile
35 40 45
Gly Asp Ile Tyr Pro Gly Gly Gly Tyr Thr Asn Tyr Asn Glu Lys Phe
50 55 60
Lys Gly Lys Ala Thr Leu Thr Ala Asp Thr Ser Thr Ser Thr Ala Tyr
65 70 75 80
Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Phe Cys
85 90 95
Ala Tyr Tyr Asp Ala Ala Gly Pro Trp Phe Ala Tyr Trp Gly Gln Gly
100 105 110
Thr Leu Val Thr Val Ser Ser
115

<210> 66
<211> 119
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: designed peptide

<400> 66
Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala
1 5 10 15
Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asn Tyr
20 25 30
Trp Leu Gly Trp Val Lys Gln Arg Pro Gly Gln Gly Leu Glu Trp Ile
35 40 45
Gly Asp Ile Tyr Pro Gly Gly Gly Tyr Thr Asn Tyr Asn Glu Lys Phe
50 55 60
Lys Gly Lys Ala Thr Leu Thr Ala Asp Thr Ser Thr Ser Thr Ala Tyr
65 70 75 80
Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys
85 90 95
Ala Tyr Tyr Asp Ala Ala Gly Pro Trp Phe Ala Tyr Trp Gly Gln Gly
100 105 110
Thr Thr Val Thr Val Ser Ser
115

<210> 67
<211> 119
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: designed peptide

<400> 67
Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala
1 5 10 15
Ser Val Lys Val Pro Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asn Tyr
20 25 30
Trp Leu Gly Trp Val Lys Gln Arg Pro Gly Gln Gly Leu Glu Trp Ile
35 40 45
Gly Asp Ile Tyr Pro Gly Gly Gly Tyr Thr Asn Tyr Asn Glu Lys Phe
50 55 60
Lys Gly Lys Ala Thr Leu Thr Ala Asp Thr Ser Thr Ser Thr Ala Tyr
65 70 75 80
Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys
85 90 95

Ala Tyr Tyr Asp Ala Ala Gly Pro Trp Phe Ala Tyr Trp Gly Gln Gly
100 105 110

Thr Leu Val Thr Val Ser Ser
115

<210> 68

<211> 119

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: designed
peptide

<400> 68

Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala
1 5 10 15

Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asn Tyr
20 25 30

Trp Leu Gly Trp Val Lys Gln Arg Pro Gly Gln Gly Leu Glu Trp Ile
35 40 45

Gly Asp Ile Tyr Pro Gly Gly Gly Tyr Thr Asn Tyr Asn Glu Lys Phe
50 55 60

Lys Gly Lys Ala Thr Leu Thr Ala Asp Thr Ser Thr Ser Thr Ala Tyr
65 70 75 80

Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys
85 90 95

Ala Tyr Tyr Asp Ala Ala Gly Pro Trp Phe Ala Tyr Trp Gly Gln Gly
100 105 110

Thr Leu Val Thr Val Ser Ser
115

<210> 69

<211> 119

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: designed
peptide

<400> 69

Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala
1 5 10 15

Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asn Tyr
20 25 30

Trp Leu Gly Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Ile
35 40 45

Gly Asp Ile Tyr Pro Gly Gly Gly Tyr Thr Asn Tyr Asn Glu Lys Phe

50 55 60
 Lys Gly Lys Ala Thr Leu Thr Ala Asp Thr Ser Thr Ser Thr Ala Tyr
 65 70 75 80
 Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys
 85 90 95
 Ala Tyr Tyr Asp Ala Ala Gly Pro Trp Phe Ala Tyr Trp Gly Gln Gly
 100 105 110
 Thr Leu Val Thr Val Ser Ser
 115

<210> 70
 <211> 119
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: designed
 peptide

<400> 70
 Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala
 1 5 10 15
 Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asn Tyr
 20 25 30
 Trp Leu Gly Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Ile
 35 40 45
 Gly Asp Ile Tyr Pro Gly Gly Gly Tyr Thr Asn Tyr Asn Glu Lys Phe
 50 55 60
 Lys Gly Lys Ala Thr Leu Thr Ala Asp Thr Ser Thr Ser Thr Ala Tyr
 65 70 75 80
 Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys
 85 90 95
 Ala Tyr Tyr Asp Ala Ala Gly Pro Trp Phe Ala Tyr Trp Gly Gln Gly
 100 105 110
 Thr Thr Val Thr Val Ser Ser
 115

<210> 71
 <211> 119
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: designed
 peptide

<400> 71
 Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala
 1 5 10 15

Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asn Tyr
 20 25 30
 Trp Leu Gly Trp Val Lys Gln Arg Pro Gly Gln Gly Leu Glu Trp Ile
 35 40 45
 Gly Asp Ile Tyr Pro Gly Gly Gly Tyr Thr Asn Tyr Asn Glu Lys Phe
 50 55 60
 Lys Gly Lys Ala Thr Leu Thr Ala Asp Thr Ser Thr Ser Thr Ala Tyr
 65 70 75 80
 Met Glu Leu Ser Ser Leu Thr Ser Glu Asp Ser Ala Val Tyr Tyr Cys
 85 90 95
 Ala Tyr Tyr Asp Ala Ala Gly Pro Trp Phe Ala Tyr Trp Gly Gln Gly
 100 105 110
 Thr Thr Val Thr Val Ser Ser
 115

<210> 72
 <211> 119
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: designed peptide

<400> 72
 Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala
 1 5 10 15
 Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asn Tyr
 20 25 30
 Trp Leu Gly Trp Val Lys Gln Arg Pro Gly Gln Gly Leu Glu Trp Ile
 35 40 45
 Gly Asp Ile Tyr Pro Gly Gly Gly Tyr Thr Asn Tyr Asn Glu Lys Phe
 50 55 60
 Lys Gly Lys Ala Thr Leu Thr Ala Asp Thr Ser Thr Ser Thr Ala Tyr
 65 70 75 80
 Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Phe Cys
 85 90 95
 Ala Tyr Tyr Asp Ala Ala Gly Pro Trp Phe Ala Tyr Trp Gly Gln Gly
 100 105 110
 Thr Thr Val Thr Val Ser Ser
 115

<210> 73
 <211> 119
 <212> PRT
 <213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: designed peptide

<400> 73

Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala
1 5 10 15
Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asn Tyr
20 25 30
Trp Leu Gly Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Ile
35 40 45
Gly Asp Ile Tyr Pro Gly Gly Gly Tyr Thr Asn Tyr Asn Glu Lys Phe
50 55 60
Lys Gly Lys Ala Thr Leu Thr Ala Asp Thr Ser Ser Ser Thr Ala Tyr
65 70 75 80
Met Gln Leu Ser Ser Leu Thr Ser Glu Asp Ser Ala Val Tyr Tyr Cys
85 90 95
Ala Tyr Tyr Asp Ala Ala Gly Pro Trp Phe Ala Tyr Trp Gly Gln Gly
100 105 110
Thr Thr Val Thr Val Ser Ser
115

<210> 74

<211> 119

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: designed peptide

<400> 74

Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala
1 5 10 15
Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asn Tyr
20 25 30
Trp Leu Gly Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Ile
35 40 45
Gly Asp Ile Tyr Pro Gly Gly Gly Tyr Thr Asn Tyr Asn Glu Lys Phe
50 55 60
Lys Gly Lys Ala Thr Leu Thr Ala Asp Thr Ser Thr Ser Thr Ala Tyr
65 70 75 80
Met Glu Leu Ser Ser Leu Thr Ser Glu Asp Ser Ala Val Tyr Phe Cys
85 90 95
Ala Tyr Tyr Asp Ala Ala Gly Pro Trp Phe Ala Tyr Trp Gly Gln Gly
100 105 110
Thr Thr Val Thr Val Ser Ser
115

<210> 75
<211> 119
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: designed peptide

<400> 75
Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala
1 5 10 15
Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asn Tyr
20 25 30
Trp Leu Gly Trp Val Lys Gln Arg Pro Gly Gln Gly Leu Glu Trp Ile
35 40 45
Gly Asp Ile Tyr Pro Gly Gly Gly Tyr Thr Asn Tyr Asn Glu Lys Phe
50 55 60
Lys Gly Arg Val Thr Ile Thr Ala Asp Thr Ser Thr Ser Thr Ala Tyr
65 70 75 80
Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Phe Cys
85 90 95
Ala Tyr Tyr Asp Ala Ala Gly Pro Trp Phe Ala Tyr Trp Gly Gln Gly
100 105 110
Thr Leu Val Thr Val Ser Ser
115

<210> 76
<211> 119
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: designed peptide

<400> 76
Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala
1 5 10 15
Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asn Tyr
20 25 30
Trp Leu Gly Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Ile
35 40 45
Gly Asp Ile Tyr Pro Gly Gly Gly Tyr Thr Asn Tyr Asn Glu Lys Phe
50 55 60
Lys Gly Arg Val Thr Ile Thr Ala Asp Thr Ser Thr Ser Thr Ala Tyr
65 70 75 80
Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys
85 90 95

Ala Tyr Tyr Asp Ala Ala Gly Pro Trp Phe Ala Tyr Trp Gly Gln Gly
100 105 110

Thr Leu Val Thr Val Ser Ser
115

<210> 77

<211> 119

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: designed
peptide

<400> 77

Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala
1 5 10 15

Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asn Tyr
20 25 30

Trp Leu Gly Trp Val Lys Gln Arg Pro Gly Gln Gly Leu Glu Trp Ile
35 40 45

Gly Asp Ile Tyr Pro Gly Gly Gly Tyr Thr Asn Tyr Asn Glu Lys Phe
50 55 60

Lys Gly Arg Val Thr Ile Thr Ala Asp Thr Ser Thr Ser Thr Ala Tyr
65 70 75 80

Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys
85 90 95

Ala Tyr Tyr Asp Ala Ala Gly Pro Trp Phe Ala Tyr Trp Gly Gln Gly
100 105 110

Thr Leu Val Thr Val Ser Ser
115

<210> 78

<211> 119

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: designed
peptide

<400> 78

Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala
1 5 10 15

Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asn Tyr
20 25 30

Trp Leu Gly Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Met
35 40 45

Gly Asp Ile Tyr Pro Gly Gly Gly Tyr Thr Asn Tyr Asn Glu Lys Phe

50 55 60
 Lys Gly Arg Val Thr Ile Thr Ala Asp Thr Ser Thr Ser Thr Ala Tyr
 65 70 75 80
 Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys
 85 90 95
 Ala Tyr Tyr Asp Ala Ala Gly Pro Trp Phe Ala Tyr Trp Gly Gln Gly
 100 105 110
 Thr Leu Val Thr Val Ser Ser
 115

<210> 79
 <211> 119
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: designed
 peptide

<400> 79
 Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala
 1 5 10 15
 Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asn Tyr
 20 25 30
 Trp Leu Gly Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Met
 35 40 45
 Gly Asp Ile Tyr Pro Gly Gly Gly Tyr Thr Asn Tyr Asn Glu Lys Phe
 50 55 60
 Lys Gly Arg Val Thr Met Thr Arg Asp Thr Ser Thr Ser Thr Val Tyr
 65 70 75 80
 Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys
 85 90 95
 Ala Tyr Tyr Asp Ala Ala Gly Pro Trp Phe Ala Tyr Trp Gly Gln Gly
 100 105 110
 Thr Leu Val Thr Val Ser Ser
 115

<210> 80
 <211> 114
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: designed
 peptide

<400> 80
 Asp Ile Gln Met Thr Gln Thr Pro Leu Ser Leu Pro Val Ser Leu Gly
 1 5 10 15

Asp Gln Ala Ser Ile Ser Cys Arg Ser Ser Gln Ser Ile Val His Ser
 20 25 30
 Asn Gly Asn Thr Tyr Leu Glu Trp Tyr Leu Gln Lys Pro Gly Gln Ser
 35 40 45
 Pro Lys Leu Leu Ile Tyr Lys Val Ser Asn Arg Phe Ser Gly Val Pro
 50 55 60
 Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Lys Ile
 65 70 75 80
 Ser Arg Val Glu Ala Glu Asp Leu Gly Val Tyr Tyr Cys Phe Gln Gly
 85 90 95
 Ser His Val Pro Tyr Thr Phe Gly Gly Gly Thr Lys Leu Glu Ile Lys
 100 105 110

Arg Ala

<210> 81
 <211> 114
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: designed peptide

<400> 81
 Asp Ile Val Ile Thr Gln Thr Pro Leu Ser Leu Pro Val Ser Leu Gly
 1 5 10 15
 Asp Gln Ala Ser Ile Ser Cys Arg Ser Ser Gln Ser Leu Leu His Ser
 20 25 30
 Asn Gly Asn Thr Tyr Leu His Trp Tyr Leu Gln Lys Pro Gly Gln Ser
 35 40 45
 Pro Lys Leu Leu Ile Tyr Lys Val Ser Asn Arg Phe Ser Gly Val Pro
 50 55 60
 Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Lys Ile
 65 70 75 80
 Ser Arg Val Glu Ala Glu Asp Leu Gly Val Tyr Phe Cys Ser Gln Ser
 85 90 95
 Thr His Val Pro Tyr Thr Phe Gly Gly Gly Thr Lys Leu Glu Ile Lys
 100 105 110

Arg Ala

<210> 82
 <211> 114
 <212> PRT
 <213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: designed peptide

<400> 82

Asp	Ile	Gln	Met	Thr	Gln	Thr	Pro	Leu	Ser	Leu	Pro	Val	Ser	Leu	Gly
1				5					10					15	
Asp	Gln	Ala	Ser	Ile	Ser	Cys	Arg	Ser	Ser	Gln	Ser	Ile	Val	His	Ser
			20					25					30		
Asn	Gly	Asn	Thr	Tyr	Leu	Glu	Trp	Tyr	Leu	Gln	Lys	Pro	Gly	Gln	Ser
		35					40					45			
Pro	Lys	Leu	Leu	Ile	Tyr	Lys	Val	Ser	Asn	Arg	Phe	Ser	Gly	Val	Pro
	50					55					60				
Asp	Arg	Phe	Ser	Gly	Ser	Gly	Ser	Gly	Thr	Asp	Phe	Thr	Leu	Lys	Ile
65					70					75					80
Ser	Arg	Val	Glu	Ala	Glu	Asp	Leu	Gly	Val	Tyr	Tyr	Cys	Phe	Gln	Gly
				85					90					95	
Ser	His	Val	Pro	Tyr	Thr	Phe	Gly	Gly	Gly	Thr	Lys	Leu	Glu	Leu	Lys
			100					105					110		

Arg Ala

<210> 83

<211> 114

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: designed peptide

<400> 83

Asp	Val	Leu	Met	Thr	Gln	Thr	Pro	Leu	Ser	Leu	Pro	Val	Ser	Leu	Gly
1				5					10					15	
Asp	Gln	Ala	Ser	Ile	Ser	Cys	Arg	Ser	Ser	Gln	Ser	Ile	Val	His	Ser
			20					25					30		
Asn	Gly	Asn	Thr	Tyr	Leu	Glu	Trp	Tyr	Leu	Gln	Lys	Pro	Gly	Gln	Ser
		35					40					45			
Pro	Lys	Leu	Leu	Ile	Tyr	Lys	Val	Ser	Asn	Arg	Phe	Ser	Gly	Val	Pro
	50					55					60				
Asp	Arg	Phe	Ser	Gly	Ser	Gly	Ser	Gly	Thr	Asp	Phe	Thr	Leu	Lys	Ile
65					70					75					80
Ser	Arg	Val	Glu	Ala	Glu	Asp	Leu	Gly	Val	Tyr	Tyr	Cys	Phe	Gln	Gly
				85					90					95	
Ser	His	Val	Pro	Tyr	Thr	Phe	Gly	Gly	Gly	Thr	Lys	Leu	Glu	Ile	Lys
			100					105					110		

Arg Ala

<210> 84
<211> 114
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: designed peptide

<400> 84
Asp Val Leu Met Thr Gln Thr Pro Leu Ser Leu Pro Val Ser Leu Gly
1 5 10 15
Asp Gln Ala Ser Ile Ser Cys Arg Ser Ser Gln Ser Ile Val His Ser
20 25 30
Asn Gly Asn Thr Tyr Leu Glu Trp Tyr Leu Gln Lys Pro Gly Gln Ser
35 40 45
Pro Lys Leu Leu Ile Tyr Lys Val Ser Asn Arg Phe Ser Gly Val Pro
50 55 60
Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Lys Ile
65 70 75 80
Ser Arg Val Glu Ala Glu Asp Leu Gly Val Tyr Tyr Cys Phe Gln Gly
85 90 95
Ser His Val Pro Tyr Thr Phe Gly Gly Gly Thr Lys Leu Glu Leu Lys
100 105 110
Arg Ala

<210> 85
<211> 114
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: designed peptide

<400> 85
Asp Ile Gln Met Thr Gln Ser Pro Leu Ser Leu Pro Val Thr Pro Gly
1 5 10 15
Glu Pro Ala Ser Ile Ser Cys Arg Ser Ser Gln Ser Ile Val His Ser
20 25 30
Asn Gly Asn Thr Tyr Leu Glu Trp Tyr Leu Gln Lys Pro Gly Gln Ser
35 40 45
Pro Lys Leu Leu Ile Tyr Lys Val Ser Asn Arg Phe Ser Gly Val Pro
50 55 60
Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Lys Ile
65 70 75 80
Ser Arg Val Glu Ala Glu Asp Val Gly Val Tyr Tyr Cys Phe Gln Gly
85 90 95

Ser His Val Pro Tyr Thr Phe Gly Gly Gly Thr Lys Val Glu Ile Lys
100 105 110

Arg Ala

<210> 86

<211> 114

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: designed
peptide

<400> 86

Asp Ile Gln Met Thr Gln Ser Pro Leu Ser Leu Pro Val Thr Pro Gly
1 5 10 15

Glu Pro Ala Ser Ile Ser Cys Arg Ser Ser Gln Ser Ile Val His Ser
20 25 30

Asn Gly Asn Thr Tyr Leu Glu Trp Tyr Leu Gln Lys Pro Gly Gln Ser
35 40 45

Pro Lys Leu Leu Ile Tyr Lys Val Ser Asn Arg Phe Ser Gly Val Pro
50 55 60

Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Lys Ile
65 70 75 80

Ser Arg Val Glu Ala Glu Asp Val Gly Val Tyr Tyr Cys Phe Gln Gly
85 90 95

Ser His Val Pro Tyr Thr Phe Gly Gln Gly Thr Lys Val Glu Ile Lys
100 105 110

Arg Ala

<210> 87

<211> 114

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: designed
peptide

<400> 87

Asp Ile Gln Met Thr Gln Ser Pro Leu Ser Leu Pro Val Thr Pro Gly
1 5 10 15

Glu Pro Ala Ser Ile Ser Cys Arg Ser Ser Gln Ser Ile Val His Ser
20 25 30

Asn Gly Asn Thr Tyr Leu Glu Trp Tyr Leu Gln Lys Pro Gly Gln Ser
35 40 45

Pro Gln Leu Leu Ile Tyr Lys Val Ser Asn Arg Phe Ser Gly Val Pro

50 55 60
 Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Lys Ile
 65 70 75 80
 Ser Arg Val Glu Ala Glu Asp Val Gly Val Tyr Tyr Cys Phe Gln Gly
 85 90 95
 Ser His Val Pro Tyr Thr Phe Gly Gly Gly Thr Lys Val Glu Ile Lys
 100 105 110
 Arg Ala

<210> 88
 <211> 114
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: designed peptide

<400> 88
 Asp Ile Gln Met Thr Gln Ser Pro Leu Ser Leu Pro Val Thr Pro Gly
 1 5 10 15
 Glu Pro Ala Ser Ile Ser Cys Arg Ser Ser Gln Ser Ile Val His Ser
 20 25 30
 Asn Gly Asn Thr Tyr Leu Glu Trp Tyr Leu Gln Lys Pro Gly Gln Ser
 35 40 45
 Pro Gln Leu Leu Ile Tyr Lys Val Ser Asn Arg Phe Ser Gly Val Pro
 50 55 60
 Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Lys Ile
 65 70 75 80
 Ser Arg Val Glu Ala Glu Asp Val Gly Val Tyr Tyr Cys Phe Gln Gly
 85 90 95
 Ser His Val Pro Tyr Thr Phe Gly Gln Gly Thr Lys Val Glu Ile Lys
 100 105 110
 Arg Ala

<210> 89
 <211> 114
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: designed peptide

<400> 89
 Asp Ile Val Met Thr Gln Ser Pro Leu Ser Leu Pro Val Thr Pro Gly
 1 5 10 15

Glu	Pro	Ala	Ser	Ile	Ser	Cys	Arg	Ser	Ser	Gln	Ser	Ile	Val	His	Ser
			20					25					30		
Asn	Gly	Asn	Thr	Tyr	Leu	Glu	Trp	Tyr	Leu	Gln	Lys	Pro	Gly	Gln	Ser
		35					40					45			
Pro	Lys	Leu	Leu	Ile	Tyr	Lys	Val	Ser	Asn	Arg	Phe	Ser	Gly	Val	Pro
	50					55					60				
Asp	Arg	Phe	Ser	Gly	Ser	Gly	Ser	Gly	Thr	Asp	Phe	Thr	Leu	Lys	Ile
65					70					75					80
Ser	Arg	Val	Glu	Ala	Glu	Asp	Val	Gly	Val	Tyr	Tyr	Cys	Phe	Gln	Gly
				85					90					95	
Ser	His	Val	Pro	Tyr	Thr	Phe	Gly	Gly	Gly	Thr	Lys	Val	Glu	Ile	Lys
			100					105					110		

Arg Ala

<210> 90
 <211> 114
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: designed peptide

Asp	Ile	Val	Met	Thr	Gln	Ser	Pro	Leu	Ser	Leu	Pro	Val	Thr	Pro	Gly
1				5					10					15	
Glu	Pro	Ala	Ser	Ile	Ser	Cys	Arg	Ser	Ser	Gln	Ser	Ile	Val	His	Ser
			20					25					30		
Asn	Gly	Asn	Thr	Tyr	Leu	Glu	Trp	Tyr	Leu	Gln	Lys	Pro	Gly	Gln	Ser
		35					40					45			
Pro	Lys	Leu	Leu	Ile	Tyr	Lys	Val	Ser	Asn	Arg	Phe	Ser	Gly	Val	Pro
	50					55					60				
Asp	Arg	Phe	Ser	Gly	Ser	Gly	Ser	Gly	Thr	Asp	Phe	Thr	Leu	Lys	Ile
65					70					75					80
Ser	Arg	Val	Glu	Ala	Glu	Asp	Val	Gly	Val	Tyr	Tyr	Cys	Phe	Gln	Gly
				85					90					95	
Ser	His	Val	Pro	Tyr	Thr	Phe	Gly	Gln	Gly	Thr	Lys	Val	Glu	Ile	Lys
			100					105					110		

Arg Ala

<210> 91
 <211> 114
 <212> PRT
 <213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: designed peptide

<400> 91

Asp	Ile	Val	Met	Thr	Gln	Ser	Pro	Leu	Ser	Leu	Pro	Val	Thr	Pro	Gly	
1				5					10					15		
Glu	Pro	Ala	Ser	Ile	Ser	Cys	Arg	Ser	Ser	Gln	Ser	Ile	Val	His	Ser	
			20					25					30			
Asn	Gly	Asn	Thr	Tyr	Leu	Glu	Trp	Tyr	Leu	Gln	Lys	Pro	Gly	Gln	Ser	
		35					40					45				
Pro	Gln	Leu	Leu	Ile	Tyr	Lys	Val	Ser	Asn	Arg	Phe	Ser	Gly	Val	Pro	
	50					55					60					
Asp	Arg	Phe	Ser	Gly	Ser	Gly	Ser	Gly	Thr	Asp	Phe	Thr	Leu	Lys	Ile	
65					70					75					80	
Ser	Arg	Val	Glu	Ala	Glu	Asp	Val	Gly	Val	Tyr	Tyr	Cys	Phe	Gln	Gly	
				85					90					95		
Ser	His	Val	Pro	Tyr	Thr	Phe	Gly	Gly	Gly	Thr	Lys	Val	Glu	Ile	Lys	
			100					105					110			

Arg Ala

<210> 92

<211> 114

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: designed peptide

<400> 92

Asp	Ile	Val	Met	Thr	Gln	Ser	Pro	Leu	Ser	Leu	Pro	Val	Thr	Pro	Gly	
1				5					10					15		
Glu	Pro	Ala	Ser	Ile	Ser	Cys	Arg	Ser	Ser	Gln	Ser	Ile	Val	His	Ser	
			20					25					30			
Asn	Gly	Asn	Thr	Tyr	Leu	Glu	Trp	Tyr	Leu	Gln	Lys	Pro	Gly	Gln	Ser	
		35					40					45				
Pro	Gln	Leu	Leu	Ile	Tyr	Lys	Val	Ser	Asn	Arg	Phe	Ser	Gly	Val	Pro	
	50					55					60					
Asp	Arg	Phe	Ser	Gly	Ser	Gly	Ser	Gly	Thr	Asp	Phe	Thr	Leu	Lys	Ile	
65					70					75					80	
Ser	Arg	Val	Glu	Ala	Glu	Asp	Val	Gly	Val	Tyr	Tyr	Cys	Phe	Gln	Gly	
				85					90					95		
Ser	His	Val	Pro	Tyr	Thr	Phe	Gly	Gln	Gly	Thr	Lys	Val	Glu	Ile	Lys	
			100					105					110			

Arg Ala

<210> 93
<211> 114
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: designed
peptide

<400> 93
Asp Ile Val Met Thr Gln Thr Pro Leu Ser Leu Pro Val Thr Pro Gly
1 5 10 15
Gln Pro Ala Ser Ile Ser Cys Arg Ser Ser Gln Ser Ile Val His Ser
20 25 30
Asn Gly Asn Thr Tyr Leu Glu Trp Tyr Leu Gln Lys Pro Gly Gln Ser
35 40 45
Pro Gln Leu Leu Ile Tyr Lys Val Ser Asn Arg Phe Ser Gly Val Pro
50 55 60
Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Lys Ile
65 70 75 80
Ser Arg Val Glu Ala Glu Asp Val Gly Val Tyr Tyr Cys Phe Gln Gly
85 90 95
Ser His Val Pro Tyr Thr Phe Gly Gln Gly Thr Lys Val Glu Ile Lys
100 105 110
Arg Ala

<210> 94
<211> 114
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: designed
peptide

<400> 94
Asp Ile Val Met Thr Gln Thr Pro Leu Ser Leu Ser Val Thr Pro Gly
1 5 10 15
Gln Pro Ala Ser Ile Ser Cys Arg Ser Ser Gln Ser Ile Val His Ser
20 25 30
Asn Gly Asn Thr Tyr Leu Glu Trp Tyr Leu Gln Lys Pro Gly Gln Ser
35 40 45
Pro Gln Leu Leu Ile Tyr Lys Val Ser Asn Arg Phe Ser Gly Val Pro
50 55 60
Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Lys Ile
65 70 75 80
Ser Arg Val Glu Ala Glu Asp Val Gly Val Tyr Tyr Cys Phe Gln Gly
85 90 95

Ser His Val Pro Tyr Thr Phe Gly Gln Gly Thr Lys Val Glu Ile Lys
100 105 110

Arg Ala

<210> 95

<211> 276

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: designed
peptide

<400> 95

Gln Val Gln Leu Lys Glu Ser Gly Ala Glu Leu Val Arg Pro Gly Thr
1 5 10 15

Ser Val Lys Ile Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asn Tyr
20 25 30

Trp Leu Gly Trp Val Lys Gln Arg Pro Gly His Gly Leu Glu Trp Ile
35 40 45

Gly Asp Ile Tyr Pro Gly Gly Gly Tyr Thr Asn Tyr Asn Glu Lys Phe
50 55 60

Lys Gly Lys Ala Thr Leu Thr Ala Asp Thr Ser Ser Ser Thr Ala Tyr
65 70 75 80

Met Gln Leu Ser Ser Leu Thr Ser Glu Asp Ser Ala Val Tyr Phe Cys
85 90 95

Ala Tyr Tyr Asp Ala Ala Gly Pro Gly Phe Ala Tyr Trp Gly Gln Gly
100 105 110

Thr Thr Val Thr Val Ser Ser Ala Ser Ser Gly Gly Gly Gly Ser Gly
115 120 125

Gly Gly Gly Ser Gly Gly Ser Ala Arg Asp Ile Gln Met Thr Gln Thr
130 135 140

Pro Leu Ser Leu Pro Val Ser Leu Gly Asp Gln Ala Ser Ile Ser Cys
145 150 155 160

Arg Ser Ser Gln Ser Ile Val His Ser Asn Gly Asn Thr Tyr Leu Glu
165 170 175

Trp Tyr Leu Gln Lys Pro Gly Gln Ser Pro Lys Leu Leu Ile Tyr Lys
180 185 190

Val Ser Asn Arg Phe Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Gly
195 200 205

Ser Gly Thr Asp Phe Thr Leu Lys Ile Ser Arg Val Glu Ala Glu Asp
210 215 220

Leu Gly Val Tyr Tyr Cys Phe Gln Gly Ser His Val Pro Tyr Thr Phe
225 230 235 240

Gly Gly Gly Thr Lys Leu Glu Ile Lys Arg Ala Ala Ala His His His
245 250 255
His His His Gly Ala Ala Glu Gln Lys Leu Ile Ser Glu Glu Asp Leu
260 265 270
Asn Gly Ala Ala
275

<210> 96

<211> 267

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: designed
peptide

<400> 96

Gln Val Gln Leu Lys Glu Ser Gly Ala Glu Leu Val Arg Pro Gly Thr
1 5 10 15
Ser Val Lys Ile Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asn Tyr
20 25 30
Trp Leu Gly Trp Val Lys Gln Arg Pro Gly His Gly Leu Glu Trp Ile
35 40 45
Gly Asp Ile Tyr Pro Gly Gly Gly Tyr Thr Asn Tyr Asn Glu Lys Phe
50 55 60
Lys Gly Lys Ala Thr Leu Thr Ala Asp Thr Ser Ser Ser Thr Ala Tyr
65 70 75 80
Met Gln Leu Ser Ser Leu Thr Ser Glu Asp Ser Ala Val Tyr Phe Cys
85 90 95
Ala Tyr Tyr Asp Ala Ala Gly Pro Gly Phe Ala Tyr Trp Gly Gln Gly
100 105 110
Thr Thr Val Thr Val Ser Ser Ala Ser Ser Gly Ser Gly Ser Ser Ala
115 120 125
Asp Ile Gln Met Thr Gln Thr Pro Leu Ser Leu Pro Val Ser Leu Gly
130 135 140
Asp Gln Ala Ser Ile Ser Cys Arg Ser Ser Gln Ser Ile Val His Ser
145 150 155 160
Asn Gly Asn Thr Tyr Leu Glu Trp Tyr Leu Gln Lys Pro Gly Gln Ser
165 170 175
Pro Lys Leu Leu Ile Tyr Lys Val Ser Asn Arg Phe Ser Gly Val Pro
180 185 190
Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Lys Ile
195 200 205
Ser Arg Val Glu Ala Glu Asp Leu Gly Val Tyr Tyr Cys Phe Gln Gly
210 215 220
Ser His Val Pro Tyr Thr Phe Gly Gly Gly Thr Lys Leu Glu Ile Lys

225		230		235		240
Arg	Ala	Ala	Ala	His	His	His
				245		
					His	Gly
					250	
						Ala
						Ala
						Glu
						Gln
						Lys
						255
Leu	Ile	Ser	Glu	Glu	Asp	Leu
			260			
						Asn
						Gly
						265
						Ala
						Ala

<210> 97
 <211> 266
 <212> PRT
 <213> Artificial Sequence

 <220>
 <223> Description of Artificial Sequence: designed peptide

 <400> 97

Gln	Val	Gln	Leu	Lys	Glu	Ser	Gly	Ala	Glu	Leu	Val	Arg	Pro	Gly	Thr
1				5					10					15	
Ser	Val	Lys	Ile	Ser	Cys	Lys	Ala	Ser	Gly	Tyr	Thr	Phe	Thr	Asn	Tyr
			20					25					30		
Trp	Leu	Gly	Trp	Val	Lys	Gln	Arg	Pro	Gly	His	Gly	Leu	Glu	Trp	Ile
		35					40					45			
Gly	Asp	Ile	Tyr	Pro	Gly	Gly	Gly	Tyr	Thr	Asn	Tyr	Asn	Glu	Lys	Phe
	50					55					60				
Lys	Gly	Lys	Ala	Thr	Leu	Thr	Ala	Asp	Thr	Ser	Ser	Ser	Thr	Ala	Tyr
	65				70					75					80
Met	Gln	Leu	Ser	Ser	Leu	Thr	Ser	Glu	Asp	Ser	Ala	Val	Tyr	Phe	Cys
				85					90					95	
Ala	Tyr	Tyr	Asp	Ala	Ala	Gly	Pro	Gly	Phe	Ala	Tyr	Trp	Gly	Gln	Gly
			100					105					110		
Thr	Thr	Val	Thr	Val	Ser	Ser	Ala	Ser	Ser	Gly	Gly	Ser	Ser	Ala	Asp
		115					120					125			
Ile	Gln	Met	Thr	Gln	Thr	Pro	Leu	Ser	Leu	Pro	Val	Ser	Leu	Gly	Asp
	130					135					140				
Gln	Ala	Ser	Ile	Ser	Cys	Arg	Ser	Ser	Gln	Ser	Ile	Val	His	Ser	Asn
	145				150					155					160
Gly	Asn	Thr	Tyr	Leu	Glu	Trp	Tyr	Leu	Gln	Lys	Pro	Gly	Gln	Ser	Pro
				165					170					175	
Lys	Leu	Leu	Ile	Tyr	Lys	Val	Ser	Asn	Arg	Phe	Ser	Gly	Val	Pro	Asp
			180					185					190		
Arg	Phe	Ser	Gly	Ser	Gly	Ser	Gly	Thr	Asp	Phe	Thr	Leu	Lys	Ile	Ser
		195					200					205			
Arg	Val	Glu	Ala	Glu	Asp	Leu	Gly	Val	Tyr	Tyr	Cys	Phe	Gln	Gly	Ser
	210					215					220				
His	Val	Pro	Tyr	Thr	Phe	Gly	Gly	Gly	Thr	Lys	Leu	Glu	Ile	Lys	Arg
	225				230					235					240

Ala Ala Ala His His His His His His Gly Ala Ala Glu Gln Lys Leu
245 250 255

Ile Ser Glu Glu Asp Leu Asn Gly Ala Ala
260 265

<210> 98

<211> 265

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: designed
peptide

<400> 98

Gln Val Gln Leu Lys Glu Ser Gly Ala Glu Leu Val Arg Pro Gly Thr
1 5 10 15

Ser Val Lys Ile Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asn Tyr
20 25 30

Trp Leu Gly Trp Val Lys Gln Arg Pro Gly His Gly Leu Glu Trp Ile
35 40 45

Gly Asp Ile Tyr Pro Gly Gly Gly Tyr Thr Asn Tyr Asn Glu Lys Phe
50 55 60

Lys Gly Lys Ala Thr Leu Thr Ala Asp Thr Ser Ser Ser Thr Ala Tyr
65 70 75 80

Met Gln Leu Ser Ser Leu Thr Ser Glu Asp Ser Ala Val Tyr Phe Cys
85 90 95

Ala Tyr Tyr Asp Ala Ala Gly Pro Gly Phe Ala Tyr Trp Gly Gln Gly
100 105 110

Thr Thr Val Thr Val Ser Ser Ala Ser Ser Gly Ser Ser Ala Asp Ile
115 120 125

Gln Met Thr Gln Thr Pro Leu Ser Leu Pro Val Ser Leu Gly Asp Gln
130 135 140

Ala Ser Ile Ser Cys Arg Ser Ser Gln Ser Ile Val His Ser Asn Gly
145 150 155 160

Asn Thr Tyr Leu Glu Trp Tyr Leu Gln Lys Pro Gly Gln Ser Pro Lys
165 170 175

Leu Leu Ile Tyr Lys Val Ser Asn Arg Phe Ser Gly Val Pro Asp Arg
180 185 190

Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Lys Ile Ser Arg
195 200 205

Val Glu Ala Glu Asp Leu Gly Val Tyr Tyr Cys Phe Gln Gly Ser His
210 215 220

Val Pro Tyr Thr Phe Gly Gly Gly Thr Lys Leu Glu Ile Lys Arg Ala
225 230 235 240

Ala Ala His His His His His Gly Ala Ala Glu Gln Lys Leu Ile
245 250 255

Ser Glu Glu Asp Leu Asn Gly Ala Ala
260 265

<210> 99

<211> 264

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: designed
peptide

<400> 99

Gln Val Gln Leu Lys Glu Ser Gly Ala Glu Leu Val Arg Pro Gly Thr
1 5 10 15

Ser Val Lys Ile Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asn Tyr
20 25 30

Trp Leu Gly Trp Val Lys Gln Arg Pro Gly His Gly Leu Glu Trp Ile
35 40 45

Gly Asp Ile Tyr Pro Gly Gly Gly Tyr Thr Asn Tyr Asn Glu Lys Phe
50 55 60

Lys Gly Lys Ala Thr Leu Thr Ala Asp Thr Ser Ser Ser Thr Ala Tyr
65 70 75 80

Met Gln Leu Ser Ser Leu Thr Ser Glu Asp Ser Ala Val Tyr Phe Cys
85 90 95

Ala Tyr Tyr Asp Ala Ala Gly Pro Gly Phe Ala Tyr Trp Gly Gln Gly
100 105 110

Thr Thr Val Thr Val Ser Ser Ala Ser Ser Ser Ser Ala Asp Ile Gln
115 120 125

Met Thr Gln Thr Pro Leu Ser Leu Pro Val Ser Leu Gly Asp Gln Ala
130 135 140

Ser Ile Ser Cys Arg Ser Ser Gln Ser Ile Val His Ser Asn Gly Asn
145 150 155 160

Thr Tyr Leu Glu Trp Tyr Leu Gln Lys Pro Gly Gln Ser Pro Lys Leu
165 170 175

Leu Ile Tyr Lys Val Ser Asn Arg Phe Ser Gly Val Pro Asp Arg Phe
180 185 190

Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Lys Ile Ser Arg Val
195 200 205

Glu Ala Glu Asp Leu Gly Val Tyr Tyr Cys Phe Gln Gly Ser His Val
210 215 220

Pro Tyr Thr Phe Gly Gly Gly Thr Lys Leu Glu Ile Lys Arg Ala Ala
225 230 235 240

Ala His His His His His His Gly Ala Ala Glu Gln Lys Leu Ile Ser

245

250

255

Glu Glu Asp Leu Asn Gly Ala Ala
260

<210> 100

<211> 263

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: designed
peptide

<400> 100

Gln Val Gln Leu Lys Glu Ser Gly Ala Glu Leu Val Arg Pro Gly Thr
1 5 10 15

Ser Val Lys Ile Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asn Tyr
20 25 30

Trp Leu Gly Trp Val Lys Gln Arg Pro Gly His Gly Leu Glu Trp Ile
35 40 45

Gly Asp Ile Tyr Pro Gly Gly Gly Tyr Thr Asn Tyr Asn Glu Lys Phe
50 55 60

Lys Gly Lys Ala Thr Leu Thr Ala Asp Thr Ser Ser Ser Thr Ala Tyr
65 70 75 80

Met Gln Leu Ser Ser Leu Thr Ser Glu Asp Ser Ala Val Tyr Phe Cys
85 90 95

Ala Tyr Tyr Asp Ala Ala Gly Pro Gly Phe Ala Tyr Trp Gly Gln Gly
100 105 110

Thr Thr Val Thr Val Ser Ser Ala Ser Ser Ser Ala Asp Ile Gln Met
115 120 125

Thr Gln Thr Pro Leu Ser Leu Pro Val Ser Leu Gly Asp Gln Ala Ser
130 135 140

Ile Ser Cys Arg Ser Ser Gln Ser Ile Val His Ser Asn Gly Asn Thr
145 150 155 160

Tyr Leu Glu Trp Tyr Leu Gln Lys Pro Gly Gln Ser Pro Lys Leu Leu
165 170 175

Ile Tyr Lys Val Ser Asn Arg Phe Ser Gly Val Pro Asp Arg Phe Ser
180 185 190

Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Lys Ile Ser Arg Val Glu
195 200 205

Ala Glu Asp Leu Gly Val Tyr Tyr Cys Phe Gln Gly Ser His Val Pro
210 215 220

Tyr Thr Phe Gly Gly Gly Thr Lys Leu Glu Ile Lys Arg Ala Ala Ala
225 230 235 240

His His His His His His Gly Ala Ala Glu Gln Lys Leu Ile Ser Glu
245 250 255

Glu Asp Leu Asn Gly Ala Ala
260

<210> 101

<211> 262

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: designed
peptide

<400> 101

Gln Val Gln Leu Lys Glu Ser Gly Ala Glu Leu Val Arg Pro Gly Thr
1 5 10 15

Ser Val Lys Ile Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asn Tyr
20 25 30

Trp Leu Gly Trp Val Lys Gln Arg Pro Gly His Gly Leu Glu Trp Ile
35 40 45

Gly Asp Ile Tyr Pro Gly Gly Gly Tyr Thr Asn Tyr Asn Glu Lys Phe
50 55 60

Lys Gly Lys Ala Thr Leu Thr Ala Asp Thr Ser Ser Ser Thr Ala Tyr
65 70 75 80

Met Gln Leu Ser Ser Leu Thr Ser Glu Asp Ser Ala Val Tyr Phe Cys
85 90 95

Ala Tyr Tyr Asp Ala Ala Gly Pro Gly Phe Ala Tyr Trp Gly Gln Gly
100 105 110

Thr Thr Val Thr Val Ser Ser Ala Ser Ser Ala Asp Ile Gln Met Thr
115 120 125

Gln Thr Pro Leu Ser Leu Pro Val Ser Leu Gly Asp Gln Ala Ser Ile
130 135 140

Ser Cys Arg Ser Ser Gln Ser Ile Val His Ser Asn Gly Asn Thr Tyr
145 150 155 160

Leu Glu Trp Tyr Leu Gln Lys Pro Gly Gln Ser Pro Lys Leu Leu Ile
165 170 175

Tyr Lys Val Ser Asn Arg Phe Ser Gly Val Pro Asp Arg Phe Ser Gly
180 185 190

Ser Gly Ser Gly Thr Asp Phe Thr Leu Lys Ile Ser Arg Val Glu Ala
195 200 205

Glu Asp Leu Gly Val Tyr Tyr Cys Phe Gln Gly Ser His Val Pro Tyr
210 215 220

Thr Phe Gly Gly Gly Thr Lys Leu Glu Ile Lys Arg Ala Ala Ala His
225 230 235 240

His His His His His Gly Ala Ala Glu Gln Lys Leu Ile Ser Glu Glu
245 250 255

Asp Leu Asn Gly Ala Ala
260

<210> 102

<211> 261

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: designed
peptide

<400> 102

Gln Val Gln Leu Lys Glu Ser Gly Ala Glu Leu Val Arg Pro Gly Thr
1 5 10 15

Ser Val Lys Ile Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asn Tyr
20 25 30

Trp Leu Gly Trp Val Lys Gln Arg Pro Gly His Gly Leu Glu Trp Ile
35 40 45

Gly Asp Ile Tyr Pro Gly Gly Gly Tyr Thr Asn Tyr Asn Glu Lys Phe
50 55 60

Lys Gly Lys Ala Thr Leu Thr Ala Asp Thr Ser Ser Ser Thr Ala Tyr
65 70 75 80

Met Gln Leu Ser Ser Leu Thr Ser Glu Asp Ser Ala Val Tyr Phe Cys
85 90 95

Ala Tyr Tyr Asp Ala Ala Gly Pro Gly Phe Ala Tyr Trp Gly Gln Gly
100 105 110

Thr Thr Val Thr Val Ser Ser Ala Ser Ala Asp Ile Gln Met Thr Gln
115 120 125

Thr Pro Leu Ser Leu Pro Val Ser Leu Gly Asp Gln Ala Ser Ile Ser
130 135 140

Cys Arg Ser Ser Gln Ser Ile Val His Ser Asn Gly Asn Thr Tyr Leu
145 150 155 160

Glu Trp Tyr Leu Gln Lys Pro Gly Gln Ser Pro Lys Leu Leu Ile Tyr
165 170 175

Lys Val Ser Asn Arg Phe Ser Gly Val Pro Asp Arg Phe Ser Gly Ser
180 185 190

Gly Ser Gly Thr Asp Phe Thr Leu Lys Ile Ser Arg Val Glu Ala Glu
195 200 205

Asp Leu Gly Val Tyr Tyr Cys Phe Gln Gly Ser His Val Pro Tyr Thr
210 215 220

Phe Gly Gly Gly Thr Lys Leu Glu Ile Lys Arg Ala Ala Ala His His
225 230 235 240

His His His His Gly Ala Ala Glu Gln Lys Leu Ile Ser Glu Glu Asp
245 250 255

Leu Asn Gly Ala Ala

<210> 103
 <211> 260
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: designed
 peptide

<400> 103
 Gln Val Gln Leu Lys Glu Ser Gly Ala Glu Leu Val Arg Pro Gly Thr
 1 5 10 15
 Ser Val Lys Ile Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asn Tyr
 20 25 30
 Trp Leu Gly Trp Val Lys Gln Arg Pro Gly His Gly Leu Glu Trp Ile
 35 40 45
 Gly Asp Ile Tyr Pro Gly Gly Gly Tyr Thr Asn Tyr Asn Glu Lys Phe
 50 55 60
 Lys Gly Lys Ala Thr Leu Thr Ala Asp Thr Ser Ser Ser Thr Ala Tyr
 65 70 75 80
 Met Gln Leu Ser Ser Leu Thr Ser Glu Asp Ser Ala Val Tyr Phe Cys
 85 90 95
 Ala Tyr Tyr Asp Ala Ala Gly Pro Gly Phe Ala Tyr Trp Gly Gln Gly
 100 105 110
 Thr Thr Val Thr Val Ser Ser Ala Ala Asp Ile Gln Met Thr Gln Thr
 115 120 125
 Pro Leu Ser Leu Pro Val Ser Leu Gly Asp Gln Ala Ser Ile Ser Cys
 130 135 140
 Arg Ser Ser Gln Ser Ile Val His Ser Asn Gly Asn Thr Tyr Leu Glu
 145 150 155 160
 Trp Tyr Leu Gln Lys Pro Gly Gln Ser Pro Lys Leu Leu Ile Tyr Lys
 165 170 175
 Val Ser Asn Arg Phe Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Gly
 180 185 190
 Ser Gly Thr Asp Phe Thr Leu Lys Ile Ser Arg Val Glu Ala Glu Asp
 195 200 205
 Leu Gly Val Tyr Tyr Cys Phe Gln Gly Ser His Val Pro Tyr Thr Phe
 210 215 220
 Gly Gly Gly Thr Lys Leu Glu Ile Lys Arg Ala Ala Ala His His His
 225 230 235 240
 His His His Gly Ala Ala Glu Gln Lys Leu Ile Ser Glu Glu Asp Leu
 245 250 255
 Asn Gly Ala Ala
 260

<210> 104
<211> 259
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: designed
peptide

<400> 104
Gln Val Gln Leu Lys Glu Ser Gly Ala Glu Leu Val Arg Pro Gly Thr
1 5 10 15
Ser Val Lys Ile Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asn Tyr
20 25 30
Trp Leu Gly Trp Val Lys Gln Arg Pro Gly His Gly Leu Glu Trp Ile
35 40 45
Gly Asp Ile Tyr Pro Gly Gly Gly Tyr Thr Asn Tyr Asn Glu Lys Phe
50 55 60
Lys Gly Lys Ala Thr Leu Thr Ala Asp Thr Ser Ser Ser Thr Ala Tyr
65 70 75 80
Met Gln Leu Ser Ser Leu Thr Ser Glu Asp Ser Ala Val Tyr Phe Cys
85 90 95
Ala Tyr Tyr Asp Ala Ala Gly Pro Gly Phe Ala Tyr Trp Gly Gln Gly
100 105 110
Thr Thr Val Thr Val Ser Ser Ala Asp Ile Gln Met Thr Gln Thr Pro
115 120 125
Leu Ser Leu Pro Val Ser Leu Gly Asp Gln Ala Ser Ile Ser Cys Arg
130 135 140
Ser Ser Gln Ser Ile Val His Ser Asn Gly Asn Thr Tyr Leu Glu Trp
145 150 155 160
Tyr Leu Gln Lys Pro Gly Gln Ser Pro Lys Leu Leu Ile Tyr Lys Val
165 170 175
Ser Asn Arg Phe Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Ser
180 185 190
Gly Thr Asp Phe Thr Leu Lys Ile Ser Arg Val Glu Ala Glu Asp Leu
195 200 205
Gly Val Tyr Tyr Cys Phe Gln Gly Ser His Val Pro Tyr Thr Phe Gly
210 215 220
Gly Gly Thr Lys Leu Glu Ile Lys Arg Ala Ala Ala His His His His
225 230 235 240
His His Gly Ala Ala Glu Gln Lys Leu Ile Ser Glu Glu Asp Leu Asn
245 250 255
Gly Ala Ala

<211> 219
<212> PRT
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: designed
peptide

<400> 107

Asp	Ile	Val	Ile	Thr	Gln	Thr	Pro	Leu	Ser	Leu	Pro	Val	Ser	Leu	Gly
1				5					10					15	
Asp	Gln	Ala	Ser	Ile	Ser	Cys	Arg	Ser	Ser	Gln	Ser	Leu	Leu	His	Ser
			20					25					30		
Asn	Gly	Asn	Thr	Tyr	Leu	His	Trp	Tyr	Leu	Gln	Lys	Pro	Gly	Gln	Ser
		35					40					45			
Pro	Lys	Leu	Leu	Ile	Tyr	Lys	Val	Ser	Asn	Arg	Phe	Ser	Gly	Val	Pro
	50					55					60				
Asp	Arg	Phe	Ser	Gly	Ser	Gly	Ser	Gly	Thr	Asp	Phe	Thr	Leu	Lys	Ile
65					70					75					80
Ser	Arg	Val	Glu	Ala	Glu	Asp	Leu	Gly	Val	Tyr	Phe	Cys	Ser	Gln	Ser
			85						90					95	
Thr	His	Val	Pro	Tyr	Thr	Phe	Gly	Gly	Gly	Thr	Lys	Leu	Glu	Ile	Lys
			100					105					110		
Arg	Ala	Asp	Ala	Ala	Pro	Thr	Val	Ser	Ile	Phe	Pro	Pro	Ser	Ser	Glu
	115						120					125			
Gln	Leu	Thr	Ser	Gly	Gly	Ala	Ser	Val	Val	Cys	Phe	Leu	Asn	Asn	Phe
	130					135					140				
Tyr	Pro	Lys	Asp	Ile	Asn	Val	Lys	Trp	Lys	Ile	Asp	Gly	Ser	Glu	Arg
145					150					155					160
Gln	Asn	Gly	Val	Leu	Asn	Ser	Trp	Thr	Asp	Gln	Asp	Ser	Lys	Asp	Ser
			165						170					175	
Thr	Tyr	Ser	Met	Ser	Ser	Thr	Leu	Thr	Leu	Thr	Lys	Asp	Glu	Tyr	Glu
			180					185					190		
Arg	His	Asn	Ser	Tyr	Thr	Cys	Glu	Ala	Thr	His	Lys	Thr	Ser	Thr	Ser
		195					200					205			
Pro	Ile	Val	Lys	Ser	Phe	Asn	Arg	Asn	Glu	Cys					
	210					215									

<210> 108
<211> 219
<212> PRT
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: designed
peptide

<400> 108

Asp Ile Gln Met Thr Gln Thr Pro Leu Ser Leu Pro Val Ser Leu Gly

1	5	10	15
Asp Gln Ala Ser Ile Ser Cys Arg Ser Ser Gln Ser Ile Val His Ser	20	25	30
Asn Gly Asn Thr Tyr Leu Glu Trp Tyr Leu Gln Lys Pro Gly Gln Ser	35	40	45
Pro Lys Leu Leu Ile Tyr Lys Val Ser Asn Arg Phe Ser Gly Val Pro	50	55	60
Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Lys Ile	65	70	75
Ser Arg Val Glu Ala Glu Asp Leu Gly Val Tyr Tyr Cys Phe Gln Gly	85	90	95
Ser His Val Pro Tyr Thr Phe Gly Gly Gly Thr Lys Leu Glu Ile Lys	100	105	110
Arg Ala Asp Ala Ala Pro Thr Val Ser Ile Phe Pro Pro Ser Ser Glu	115	120	125
Gln Leu Thr Ser Gly Gly Ala Ser Val Val Cys Phe Leu Asn Asn Phe	130	135	140
Tyr Pro Lys Asp Ile Asn Val Lys Trp Lys Ile Asp Gly Ser Glu Arg	145	150	155
Gln Asn Gly Val Leu Asn Ser Trp Thr Asp Gln Asp Ser Lys Asp Ser	165	170	175
Thr Tyr Ser Met Ser Ser Thr Leu Thr Leu Thr Lys Asp Glu Tyr Glu	180	185	190
Arg His Asn Ser Tyr Thr Cys Glu Ala Thr His Lys Thr Ser Thr Ser	195	200	205
Pro Ile Val Lys Ser Phe Asn Arg Asn Glu Cys	210	215	

<210> 109

<211> 571

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: designed peptide

<400> 109

Gln Val Gln Leu Lys Gln Ser Gly Ala Glu Leu Val Arg Pro Gly Thr	1	5	10	15
Ser Val Lys Ile Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asn Tyr	20	25	30	
Trp Leu Gly Trp Val Lys Gln Arg Pro Gly His Gly Leu Glu Trp Ile	35	40	45	
Gly Asp Ile Tyr Pro Gly Gly Ser Tyr Thr Asn Tyr Asn Glu Lys Phe	50	55	60	

Lys	Gly	Lys	Ala	Thr	Leu	Thr	Ala	Asp	Thr	Ser	Ser	Ser	Thr	Ala	Tyr	65	70	75	80
Met	Gln	Leu	Ser	Ser	Leu	Thr	Ser	Glu	Asp	Ser	Ala	Val	Tyr	Phe	Cys	85	90	95	
Ala	Arg	Tyr	Asp	Asn	His	Tyr	Phe	Asp	Tyr	Trp	Gly	Gln	Gly	Thr	Thr	100	105	110	
Leu	Thr	Val	Ser	Glu	Ser	Gln	Ser	Phe	Pro	Asn	Val	Phe	Pro	Leu	Val	115	120	125	
Ser	Cys	Glu	Ser	Pro	Leu	Ser	Asp	Lys	Asn	Leu	Val	Ala	Met	Gly	Cys	130	135	140	
Leu	Ala	Arg	Asp	Phe	Leu	Pro	Ser	Thr	Ile	Ser	Phe	Thr	Trp	Asn	Tyr	145	150	155	160
Gln	Asn	Asn	Thr	Glu	Val	Ile	Gln	Gly	Ile	Arg	Thr	Phe	Pro	Thr	Leu	165	170	175	
Arg	Thr	Gly	Gly	Lys	Tyr	Leu	Ala	Thr	Ser	Gln	Val	Leu	Leu	Ser	Pro	180	185	190	
Lys	Ser	Ile	Leu	Glu	Gly	Ser	Asp	Glu	Tyr	Leu	Val	Cys	Lys	Ile	His	195	200	205	
Tyr	Gly	Gly	Lys	Asn	Arg	Asp	Leu	His	Val	Pro	Ile	Pro	Ala	Val	Ala	210	215	220	
Glu	Met	Asn	Pro	Asn	Val	Asn	Val	Phe	Val	Pro	Pro	Arg	Asp	Gly	Phe	225	230	235	240
Ser	Gly	Pro	Ala	Pro	Arg	Lys	Ser	Lys	Leu	Ile	Cys	Glu	Ala	Thr	Asn	245	250	255	
Phe	Thr	Pro	Lys	Pro	Ile	Thr	Val	Ser	Trp	Leu	Lys	Asp	Gly	Lys	Leu	260	265	270	
Val	Glu	Ser	Gly	Phe	Thr	Thr	Asp	Pro	Val	Thr	Ile	Glu	Asn	Lys	Gly	275	280	285	
Ser	Thr	Pro	Gln	Thr	Tyr	Lys	Val	Ile	Ser	Thr	Leu	Thr	Ile	Ser	Glu	290	295	300	
Ile	Asp	Trp	Leu	Asn	Leu	Asn	Val	Tyr	Thr	Cys	Arg	Val	Asp	His	Arg	305	310	315	320
Gly	Leu	Thr	Phe	Leu	Lys	Asn	Val	Ser	Ser	Thr	Cys	Ala	Ala	Ser	Pro	325	330	335	
Ser	Thr	Asp	Ile	Leu	Thr	Phe	Thr	Ile	Pro	Pro	Ser	Phe	Ala	Asp	Ile	340	345	350	
Phe	Leu	Ser	Lys	Ser	Ala	Asn	Leu	Thr	Cys	Leu	Val	Ser	Asn	Leu	Ala	355	360	365	
Thr	Tyr	Glu	Thr	Leu	Asn	Ile	Ser	Trp	Ala	Ser	Gln	Ser	Gly	Glu	Pro	370	375	380	
Leu	Glu	Thr	Lys	Ile	Lys	Ile	Met	Glu	Ser	His	Pro	Asn	Gly	Thr	Phe	385	390	395	400

Ser Ala Lys Gly Val Ala Ser Val Cys Val Glu Asp Trp Asn Asn Arg
 405 410 415
 Lys Glu Phe Val Cys Thr Val Thr His Arg Asp Leu Pro Ser Pro Gln
 420 425 430
 Lys Lys Phe Ile Ser Lys Pro Asn Glu Val His Lys His Pro Pro Ala
 435 440 445
 Val Tyr Leu Leu Pro Pro Ala Arg Glu Gln Leu Asn Leu Arg Glu Ser
 450 455 460
 Ala Thr Val Thr Cys Leu Val Lys Gly Phe Ser Pro Ala Asp Ile Ser
 465 470 475 480
 Val Gln Trp Leu Gln Arg Gly Gln Leu Leu Pro Gln Glu Lys Tyr Val
 485 490 495
 Thr Ser Ala Pro Met Pro Glu Pro Gly Ala Pro Gly Phe Tyr Phe Thr
 500 505 510
 His Ser Ile Leu Thr Val Thr Glu Glu Glu Trp Asn Ser Gly Glu Thr
 515 520 525
 Tyr Thr Cys Val Val Gly His Glu Ala Leu Pro His Leu Val Thr Glu
 530 535 540
 Arg Thr Val Asp Lys Ser Thr Gly Lys Pro Thr Leu Tyr Asn Val Ser
 545 550 555 560
 Leu Ile Met Ser Asp Thr Gly Gly Thr Cys Tyr
 565 570

<210> 110
 <211> 573
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: designed
 peptide

<400> 110
 Gln Val Gln Leu Lys Glu Ser Gly Ala Glu Leu Val Arg Pro Gly Thr
 1 5 10 15
 Ser Val Lys Ile Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asn Tyr
 20 25 30
 Trp Leu Gly Trp Val Lys Gln Arg Pro Gly His Gly Leu Glu Trp Ile
 35 40 45
 Gly Asp Ile Tyr Pro Gly Gly Gly Tyr Thr Asn Tyr Asn Glu Lys Phe
 50 55 60
 Lys Gly Lys Ala Thr Leu Thr Ala Asp Thr Ser Ser Ser Thr Ala Tyr
 65 70 75 80
 Met Gln Leu Ser Ser Leu Thr Ser Glu Asp Ser Ala Val Tyr Phe Cys
 85 90 95

Ala	Tyr	Tyr	Asp	Ala	Ala	Gly	Pro	Trp	Phe	Ala	Tyr	Trp	Gly	Gln	Gly		
			100					105					110				
Thr	Thr	Val	Thr	Val	Ser	Glu	Ser	Gln	Ser	Phe	Pro	Asn	Val	Phe	Pro		
		115						120				125					
Leu	Val	Ser	Cys	Glu	Ser	Pro	Leu	Ser	Asp	Lys	Asn	Leu	Val	Ala	Met		
	130					135					140						
Gly	Cys	Leu	Ala	Arg	Asp	Phe	Leu	Pro	Ser	Thr	Ile	Ser	Phe	Thr	Trp		
145					150					155					160		
Asn	Tyr	Gln	Asn	Asn	Thr	Glu	Val	Ile	Gln	Gly	Ile	Arg	Thr	Phe	Pro		
				165					170					175			
Thr	Leu	Arg	Thr	Gly	Gly	Lys	Tyr	Leu	Ala	Thr	Ser	Gln	Val	Leu	Leu		
			180					185					190				
Ser	Pro	Lys	Ser	Ile	Leu	Glu	Gly	Ser	Asp	Glu	Tyr	Leu	Val	Cys	Lys		
		195					200					205					
Ile	His	Tyr	Gly	Gly	Lys	Asn	Arg	Asp	Leu	His	Val	Pro	Ile	Pro	Ala		
	210					215					220						
Val	Ala	Glu	Met	Asn	Pro	Asn	Val	Asn	Val	Phe	Val	Pro	Pro	Arg	Asp		
225					230					235					240		
Gly	Phe	Ser	Gly	Pro	Ala	Pro	Arg	Lys	Ser	Lys	Leu	Ile	Cys	Glu	Ala		
				245					250					255			
Thr	Asn	Phe	Thr	Pro	Lys	Pro	Ile	Thr	Val	Ser	Trp	Leu	Lys	Asp	Gly		
			260					265					270				
Lys	Leu	Val	Glu	Ser	Gly	Phe	Thr	Thr	Asp	Pro	Val	Thr	Ile	Glu	Asn		
		275					280					285					
Lys	Gly	Ser	Thr	Pro	Gln	Thr	Tyr	Lys	Val	Ile	Ser	Thr	Leu	Thr	Ile		
	290					295					300						
Ser	Glu	Ile	Asp	Trp	Leu	Asn	Leu	Asn	Val	Tyr	Thr	Cys	Arg	Val	Asp		
305					310					315					320		
His	Arg	Gly	Leu	Thr	Phe	Leu	Lys	Asn	Val	Ser	Ser	Thr	Cys	Ala	Ala		
				325					330					335			
Ser	Pro	Ser	Thr	Asp	Ile	Leu	Thr	Phe	Thr	Ile	Pro	Pro	Ser	Phe	Ala		
			340					345					350				
Asp	Ile	Phe	Leu	Ser	Lys	Ser	Ala	Asn	Leu	Thr	Cys	Leu	Val	Ser	Asn		
		355					360					365					
Leu	Ala	Thr	Tyr	Glu	Thr	Leu	Asn	Ile	Ser	Trp	Ala	Ser	Gln	Ser	Gly		
		370				375					380						
Glu	Pro	Leu	Glu	Thr	Lys	Ile	Lys	Ile	Met	Glu	Ser	His	Pro	Asn	Gly		
385					390					395					400		
Thr	Phe	Ser	Ala	Lys	Gly	Val	Ala	Ser	Val	Cys	Val	Glu	Asp	Trp	Asn		
				405					410					415			
Asn	Arg	Lys	Glu	Phe	Val	Cys	Thr	Val	Thr	His	Arg	Asp	Leu	Pro	Ser		
			420					425					430				

Pro Gln Lys Lys Phe Ile Ser Lys Pro Asn Glu Val His Lys His Pro
 435 440 445
 Pro Ala Val Tyr Leu Leu Pro Pro Ala Arg Glu Gln Leu Asn Leu Arg
 450 455 460
 Glu Ser Ala Thr Val Thr Cys Leu Val Lys Gly Phe Ser Pro Ala Asp
 465 470 475 480
 Ile Ser Val Gln Trp Leu Gln Arg Gly Gln Leu Leu Pro Gln Glu Lys
 485 490 495
 Tyr Val Thr Ser Ala Pro Met Pro Glu Pro Gly Ala Pro Gly Phe Tyr
 500 505 510
 Phe Thr His Ser Ile Leu Thr Val Thr Glu Glu Glu Trp Asn Ser Gly
 515 520 525
 Glu Thr Tyr Thr Cys Val Val Gly His Glu Ala Leu Pro His Leu Val
 530 535 540
 Thr Glu Arg Thr Val Asp Lys Ser Thr Gly Lys Pro Thr Leu Tyr Asn
 545 550 555 560
 Val Ser Leu Ile Met Ser Asp Thr Gly Gly Thr Cys Tyr
 565 570

<210> 111

<211> 448

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: designed peptide

<400> 111

Gln Val Gln Leu Lys Glu Ser Gly Ala Glu Leu Val Arg Pro Gly Thr
 1 5 10 15
 Ser Val Lys Ile Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asn Tyr
 20 25 30
 Trp Leu Gly Trp Val Lys Gln Arg Pro Gly His Gly Leu Glu Trp Ile
 35 40 45
 Gly Asp Ile Tyr Pro Gly Gly Gly Tyr Thr Asn Tyr Asn Glu Lys Phe
 50 55 60
 Lys Gly Lys Ala Thr Leu Thr Ala Asp Thr Ser Ser Ser Thr Ala Tyr
 65 70 75 80
 Met Gln Leu Ser Ser Leu Thr Ser Glu Asp Ser Ala Val Tyr Phe Cys
 85 90 95
 Ala Tyr Tyr Asp Ala Ala Gly Pro Trp Phe Ala Tyr Trp Gly Gln Gly
 100 105 110
 Thr Thr Val Thr Val Ser Gly Ser Thr Lys Gly Pro Ser Val Phe Pro
 115 120 125
 Leu Ala Pro Ser Ser Lys Ser Thr Ser Gly Gly Thr Ala Ala Leu Gly

130					135					140					
Cys	Leu	Val	Lys	Asp	Tyr	Phe	Pro	Glu	Pro	Val	Thr	Val	Ser	Trp	Asn
145					150					155					160
Ser	Gly	Ala	Leu	Thr	Ser	Gly	Val	His	Thr	Phe	Pro	Ala	Val	Leu	Gln
				165					170					175	
Ser	Ser	Gly	Leu	Tyr	Ser	Leu	Ser	Ser	Val	Val	Thr	Val	Pro	Ser	Ser
			180					185					190		
Ser	Leu	Gly	Thr	Gln	Thr	Tyr	Ile	Cys	Asn	Val	Asn	His	Lys	Pro	Ser
		195					200					205			
Asn	Thr	Lys	Val	Asp	Lys	Lys	Val	Glu	Pro	Lys	Ser	Cys	Asp	Lys	Thr
						215					220				
His	Thr	Cys	Pro	Pro	Cys	Pro	Ala	Pro	Glu	Leu	Leu	Gly	Gly	Pro	Ser
225					230					235					240
Val	Phe	Leu	Phe	Pro	Pro	Lys	Pro	Lys	Asp	Thr	Leu	Met	Ile	Ser	Arg
				245					250					255	
Thr	Pro	Glu	Val	Thr	Cys	Val	Val	Val	Asp	Val	Ser	His	Glu	Asp	Pro
			260						265				270		
Glu	Val	Lys	Phe	Asn	Trp	Tyr	Val	Asp	Gly	Val	Glu	Val	His	Asn	Ala
		275					280					285			
Lys	Thr	Lys	Pro	Arg	Glu	Glu	Gln	Tyr	Asn	Ser	Thr	Tyr	Arg	Val	Val
		290				295					300				
Ser	Val	Leu	Thr	Val	Leu	His	Gln	Asp	Trp	Leu	Asn	Gly	Lys	Glu	Tyr
305					310					315					320
Lys	Cys	Lys	Val	Ser	Asn	Lys	Ala	Leu	Pro	Ala	Pro	Ile	Glu	Lys	Thr
				325					330					335	
Ile	Ser	Lys	Ala	Lys	Gly	Gln	Pro	Arg	Glu	Pro	Gln	Val	Tyr	Thr	Leu
			340					345					350		
Pro	Pro	Ser	Arg	Asp	Glu	Leu	Thr	Lys	Asn	Gln	Val	Ser	Leu	Thr	Cys
			355				360					365			
Leu	Val	Lys	Gly	Phe	Tyr	Pro	Ser	Asp	Ile	Ala	Val	Glu	Trp	Glu	Ser
					375					380					
Asn	Gly	Gln	Pro	Glu	Asn	Asn	Tyr	Lys	Thr	Thr	Pro	Pro	Val	Leu	Asp
385					390					395					400
Ser	Asp	Gly	Ser	Phe	Phe	Leu	Tyr	Ser	Lys	Leu	Thr	Val	Asp	Lys	Ser
				405					410					415	
Arg	Trp	Gln	Gln	Gly	Asn	Val	Phe	Ser	Cys	Ser	Val	Met	His	Glu	Ala
			420					425					430		
Leu	His	Asn	His	Tyr	Thr	Gln	Lys	Ser	Leu	Ser	Leu	Ser	Pro	Gly	Lys
		435				440					445				

<210> 112
<211> 571
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: designed
peptide

<400> 112
Gln Val Gln Leu Lys Glu Ser Gly Ala Glu Leu Val Arg Pro Gly Thr
1 5 10 15
Ser Val Lys Ile Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asn Tyr
20 25 30
Trp Leu Gly Trp Val Lys Gln Arg Pro Gly His Gly Leu Glu Trp Ile
35 40 45
Gly Asp Ile Tyr Pro Gly Gly Gly Tyr Thr Asn Tyr Asn Glu Lys Phe
50 55 60
Lys Gly Lys Ala Thr Leu Thr Ala Asp Thr Ser Ser Ser Thr Ala Tyr
65 70 75 80
Met Gln Leu Ser Ser Leu Thr Ser Glu Asp Ser Ala Val Tyr Phe Cys
85 90 95
Ala Tyr Tyr Asp Ala Ala Gly Pro Trp Phe Ala Tyr Trp Gly Gln Gly
100 105 110
Thr Thr Val Thr Val Ser Gly Ser Ala Ser Ala Pro Thr Leu Phe Pro
115 120 125
Leu Val Ser Cys Glu Asn Ser Pro Ser Asp Thr Ser Ser Val Ala Val
130 135 140
Gly Cys Leu Ala Gln Asp Phe Leu Pro Asp Ser Ile Thr Leu Ser Trp
145 150 155 160
Lys Tyr Lys Asn Asn Ser Asp Ile Ser Ser Thr Arg Gly Phe Pro Ser
165 170 175
Val Leu Arg Gly Gly Lys Tyr Ala Ala Thr Ser Gln Val Leu Leu Pro
180 185 190
Ser Lys Asp Val Met Gln Gly Thr Asp Glu His Val Val Cys Lys Val
195 200 205
Gln His Pro Asn Gly Asn Lys Glu Lys Asn Val Pro Leu Pro Val Ile
210 215 220
Ala Glu Leu Pro Pro Lys Val Ser Val Phe Val Pro Pro Arg Asp Gly
225 230 235 240
Phe Phe Gly Asn Pro Arg Lys Ser Lys Leu Ile Cys Gln Ala Thr Gly
245 250 255
Phe Ser Pro Arg Gln Ile Gln Val Ser Trp Leu Arg Glu Gly Lys Gln
260 265 270
Val Gly Ser Gly Val Thr Thr Asp Gln Val Gln Ala Glu Ala Lys Glu
275 280 285

Ser Gly Pro Thr Thr Tyr Lys Val Thr Ser Thr Leu Thr Ile Lys Glu
 290 295 300
 Ser Asp Trp Leu Gly Gln Ser Met Phe Thr Cys Arg Val Asp His Arg
 305 310 315 320
 Gly Leu Thr Phe Gln Gln Asn Ala Ser Ser Met Cys Val Pro Asp Gln
 325 330 335
 Asp Thr Ala Ile Arg Val Phe Ala Ile Pro Pro Ser Phe Ala Ser Ile
 340 345 350
 Phe Leu Thr Lys Ser Thr Lys Leu Thr Cys Leu Val Thr Asp Leu Thr
 355 360 365
 Thr Tyr Asp Ser Val Thr Ile Ser Trp Thr Arg Gln Asn Gly Glu Ala
 370 375 380
 Val Lys Thr His Thr Asn Ile Ser Glu Ser His Pro Asn Ala Thr Phe
 385 390 395 400
 Ser Ala Val Gly Glu Ala Ser Ile Cys Glu Asp Asp Trp Asn Ser Gly
 405 410 415
 Glu Arg Phe Thr Cys Thr Val Thr His Thr Asp Leu Pro Ser Pro Leu
 420 425 430
 Lys Gln Thr Ile Ser Arg Pro Lys Gly Val Ala Leu His Arg Pro Asp
 435 440 445
 Val Tyr Leu Leu Pro Pro Ala Arg Glu Gln Leu Asn Leu Arg Glu Ser
 450 455 460
 Ala Thr Ile Thr Cys Leu Val Thr Gly Phe Ser Pro Ala Asp Val Phe
 465 470 475 480
 Val Gln Trp Met Gln Arg Gly Gln Pro Leu Ser Pro Glu Lys Tyr Val
 485 490 495
 Thr Ser Ala Pro Met Pro Glu Pro Gln Ala Pro Gly Arg Tyr Phe Ala
 500 505 510
 His Ser Ile Leu Thr Val Ser Glu Glu Glu Trp Asn Thr Gly Glu Thr
 515 520 525
 Tyr Thr Cys Val Val Ala His Glu Ala Leu Pro Asn Arg Val Thr Glu
 530 535 540
 Arg Thr Val Asp Lys Ser Thr Gly Lys Pro Thr Leu Tyr Asn Val Ser
 545 550 555 560
 Leu Val Met Ser Asp Thr Ala Gly Thr Cys Tyr
 565 570

<210> 113

<211> 219

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: designed

2

Asp 1	Ile	Gln	Met	Thr 5	Gln	Thr	Pro	Leu	Ser 10	Leu	Pro	Val	Ser	Leu 15	Gly
Asp	Gln	Ala	Ser 20	Ile	Ser	Cys	Arg	Ser 25	Ser	Gln	Ser	Ile	Val 30	His	Ser
Asn	Gly	Asn 35	Thr	Tyr	Leu	Glu	Trp 40	Tyr	Leu	Gln	Lys	Pro 45	Gly	Gln	Ser
Pro	Lys 50	Leu	Leu	Ile	Tyr	Lys 55	Val	Ser	Asn	Arg	Phe 60	Ser	Gly	Val	Pro
Asp 65	Arg	Phe	Ser	Gly	Ser 70	Gly	Ser	Gly	Thr	Asp 75	Phe	Thr	Leu	Lys	Ile 80
Ser	Arg	Val	Glu	Ala 85	Glu	Asp	Leu	Gly	Val 90	Tyr	Tyr	Cys	Phe	Gln 95	Gly
Ser	His	Val	Pro 100	Tyr	Thr	Phe	Gly	Gly 105	Gly	Thr	Lys	Leu	Glu 110	Ile	Lys
Arg	Thr	Val 115	Ala	Ala	Pro	Ser	Val 120	Phe	Ile	Phe	Pro	Pro 125	Ser	Asp	Glu
Gln 130	Leu	Lys	Ser	Gly	Thr	Ala 135	Ser	Val	Val	Cys	Leu 140	Leu	Asn	Asn	Phe
Tyr 145	Pro	Arg	Glu	Ala	Lys 150	Val	Gln	Trp	Lys	Val 155	Asp	Asn	Ala	Leu	Gln 160
Ser	Gly	Asn	Ser	Gln 165	Glu	Ser	Val	Thr	Glu 170	Gln	Asp	Ser	Lys	Asp 175	Ser
Thr	Tyr	Ser	Leu 180	Ser	Ser	Thr	Leu	Thr 185	Leu	Ser	Lys	Ala	Asp 190	Tyr	Glu
Lys	His	Lys 195	Val	Tyr	Ala	Cys	Glu 200	Val	Thr	His	Gln	Gly 205	Leu	Ser	Ser
Pro	Val 210	Thr	Lys	Ser	Phe	Asn 215	Arg	Gly	Glu	Cys					